For Our Youth.

SWIMMERS AND SWIMMING.

Curious Customs and Appliances in Tropic and Arctic Seas.

[By Walter Hough.]

One of the most venturesome sports practiced by any people is the surf-board swimming of the Sandwich Islands.

Nearly everyone has experienced the delights of surf bathing, with its exhilerating rush and battle with the tonic waves; this pleasure is keenly enjoyed by the Hawaiians, who pursue it with singular abandon.

The surf-board is a plank of light wood twelve to fourteen feet long, with one end rounded; the edges are also rounded, but the other end of the board is left square. A piece of cloth is usually bound around this end, perhaps for the support of the foot while swimming or rather being projected like a cannon ball by the wave.

A crowd of natives will swim out, towing their boards, diving under and dodging the heavy rollers coming in, until they are quite a distance from land. Every third wave is larger than the others, and on the broad back of this huge breaker the natives ride in like the wind. Sometimes they stand erect on the boards, but they usually crouch, or lie down, and keep balance with a dextrous stroke of the foot or hand, or by swaying the body. This sport is not without mishap, but the natives are such "water dogs" that the accidents rarely terminate fatally.

Captain Cook says that he saw with horror one of these surf-boards dashed into pieces, but an instant after a man

had quitted it. To be compelled to leave the board and dive back under the wave is considered very disgraceful; and, besides, the oiled, polished and highly valued board, which has required a whole tree trunk for its manufacture, is lost. Both sexes engage in this extraordinary sport, and the chiefs enjoy it as much as their subjects.

The Sandwich Islander's skill in swimming is the result of long practice. It would be a good thing if our boys could have the same advantages in learning this manly and useful art, as these athletic natives, who teach their children to swim as soon as, or even before, they can walk.

In other parts of the world sport-loving people have invented various helps in swimming. The Labrador Eskimo make small paddles which are held in the hand by swimmers, who, it is presumed, dig the water "dog-fashion." A bath in ice

cold water must be a great luxury to the Eskimo during their brief but comparatively hot summer.

It may be suggested to our inventors that they set about devising some appliance that will make swimming easier and swifter.

An English officer is said to have made ingenious and efficient swimming boards, to be held in the hands, but they do not seem to have come very largely into use as yet.

The idea of using bladders is very old. Richelieu's "little wanton boys on bladders" is a familiar phrase. When I was a boy someone told me that the way to learn to swim was to tie a bladder to the back before venturing into the water. The advice was never followed, but I remember going to the rescue of a boy who tied bladders to his feet.

Along the Tigris and Euphrates the natives still follow the very ancient method of crossing rivers by swimming upon the inflated skins of animals, held under the arm.

English lads get buoyancy by means of bundles of bull rushes and cork floats.

No doubt the harness and strap have been used ever since people began to swim. The Dyak mother, more careful of her baby than the Polynesian mother, ties a band under its arms and prevents its sinking by holding the ends while the child paddles about in great glee.

It is remarkable how long some of the Polynesian natives can remain in the water without ill effects. This is due largely, no doubt to the equality of the temperature of the air and water. The oiling of the body with cocoanut oil may have something to do with it.

In long distance swimming great feats have been performed. I doubt, however, if any modern Leander of the sporting world would care to undertake a twelve-mile swim as did an Eskimo I call to mind, who leaped from a ship, wild with desire to return to his native paradise of desolation.

The best way to learn to swim is to practice floating first, keeping the lungs inflated, holding the head back, allowing the water to fill the ears and then striking the open palms against the water and experimenting on the push it gives. After a little while one gains confidence from the floating of the body and can strike out. I found it much easier to learn to swim by using short, clawing strokes, which help flotation and progress at the same time. This was called "swimming dog fashion."

After this "dog-paddle" stroke is learned, it is easy to make the full arm strokes by bringing the hands together with the arms straight forward, then separating the hands rapidly, curving the hands under and bringing them to the first position with the least resistance possible. At the same time the feet are brought up and back, delivering the blow backward and downward with the instep and toes; this assists both flotation and progress.

Fancy strokes, such as "overhand" and "side and side," come later.

It is necessary to caution young swimmers not to bathe at nightfall when the air begins to be chilly, or when the air is markedly cooler than the water, or when overheated, and, lastly, not to stay in too long.

These rules do not apply to those summer resort bathers who deck themselves in gorgeous bathing suits, and then don't go into the water at all.

THE SQUIRE'S REVENGE.

A River Bend Story, by Martha McCulloch Williams.

The following conversation took place one day in late July among a lot of Tennessee schoolboys:

"Boys, I know sumpin' you all don't."

"What is it?"

"Squire Jenkins has got ripe water millyons."

"Shucks! Your foolin'. Watermillyons ain't never ripe about here 'fore August court day—the first Monday."

"I know that, but Squire Jinkins wuz at our house yistiddy and I heard him tell pa he'd have a load to send to town tomorrer—two weeks earlier than anybody else."

"Well, then, he's a mean ole stingy gizzard to be sellin' 'em when nobody ain't had a taste of one sence last fall."

"Le's save him the trouble."

The boys looked at one another in silence. The squire lived across the river and it was broad daylight. The ferry was a mile below, and, anyway, a boat-load of boys and the disappearance of a lot of watermelons would connect too unmistakably.

"Let's swim it," finally said the bold one among the crowd.

"We'll leave our clothes all dry this side, and our skins'll dry too in this yere sunshine."

But the rest protested: "We cain't stay thar an' eat millyons in the patch right stark naked. Somebody'd be shore to come erlong an' see us."

"Poh-h; you ain't got no gumption at all," exclaimed the proposer. "Me and Jack and Jim and Bill and Dancy'll pull off our close, swim over and git a dozen of the biggest fellers. Then we'll fling 'em in the river—the patch is up stream from here—an' let the current fetch 'em down, and George and Hart and Bostick—you can stay yere an' ketch 'em as they come swimmin' by. After we get the whole passel of 'em we'll come back and put on our close—an' then we'll eat till we cain't eat no more. What dye say?"

The hesitating fellow, Dancy, answered at once:

"I say—you'll get dawg-bit. I passed thar last week and Blue Nose, the squire's big ole houn dawg, was tied to a stake right whar the path comes down from the house to the patch. Ye better look out for him. I tell ye, Blue Nose is as savage as a meat ax."

"Yes—an' fraider'n death of powder. Gimme my gun, won't ye? I'll put in a double handful, with jes a wad of tow and top, an' I guess we won't hesitate along of no Blue Nose."

"I s'pose ye kin keep yer powder dry an' swim this yere Cumberland river?" sneered the objector.

"I kin show ye bout that," was the good-natured answer. "Come along, boys. Friday's bad luck day—but I feel like a good watermillyon would be the best luck in the world."

The selected boys started along.

In school or out the River-bend boys had a bad habit of doing whatever Joe Brierly said.

All and several they loved melons—besides the river itself was enticing, running bright and swift under the summer sun. A little gusty south wind blew fitfully across it, bringing delicious coolness to the vivid sun-burned young faces clustered at the water's edge.

It was about 3 o'clock. The eight lads had been squirrel-hunting since early morning. All the dinner they had had was what they carried in their pockets. Naturally, they were ravenously hungry. That, though, was not the main reason of their projected raid.

Squire Jenkins was a well-to-do bachelor, who had somehow got the name among them of being a "stingy gizzard," and they had a sense of crude justice in thus despoiling an unneighborly neighbor.

In a minute more five firm white young bodies full of swelling thews and sinews were in the soft lap of the river making swiftly across it.

At their head Joe Brierly swam with easy power, one arm high above his head, holding the loaded gun which was to deal deadly fright to Blue Nose.

"Now, I call this a lark," he said, scrambling up the further river bank.

"Me, too," Bill Jenet said, leaping after him, then shaking himself as a dog might.

"Say, Joe, we never thought to fetch my knife to plug 'em—ter see if they're ripe. Bet a horse to a ginger cake half the millyions we pull'll be green."

"You shet up," Joe said, disdainfully. "Can't Dancy Riggs tell green from ripe by the way they thump! Dancy, hurry out of that water. It's time this yere fun wus beginning."

"Whar's old Blue Nose? I ain't a-comin' up thar tell I know about him," Dancy said placidly, treading water in the deep eddy to which he clung.

Joe gave a contemptuous whistle, but stopped in the middle of it as a ferocious barking broke out on the bank just over his head.

"I tole ye so. He'll chaw ye up alive," Dancy called, swimming out ten yards from shore.

"I lay he don't," Joe shouted, clambering through the bushes to the level of the watermelon patch. "Now, Sweet Betsy, give Mr. Blue Nose your best regards."

"Sweet Betsy" went off with the roar of a young cannon. Long before the echoes died away the river valley rang likewise with a dolorous howling as Blue Nose ran yelping up the homeward path.

"Look at 'im. Jes' look at 'im," Joe shouted, clapping his hands on his gleaming white sides. "The ole dog give such a jump he pulled up the stake and has gone home with it a-galloopping behind him. Now you, Bill and Tom and Jim, cut off all the ripe ones you find, and as soon as we get a dozen we'll all begin to tote and fling in."

"I—wish I had my shirt," Dancy said with a little shame faced shiver, as he came out of the water. Joe eyed him with a laugh, saying:

"It's t'other side of the river, my son. You best buckle to and help tote the millyions and let's us get away from yere right quick. As soon as Blue Nose gets home his master'll be comin' down yere to see what's to pay. So, waltze in, sonny."

Joe paused here, seeing Bill Jenet looking apprehensively over his shoulder, and the next second he dropped his gun and held up a warning hand.

His quick ear had caught the sound of heavy footsteps coming in from the river through the bushes, a very little way above where they had made their landing.

"Down—all of ye—an' lay flatter'n lizards," he whispered loudly. At once four white figures fell face downward upon the crab grass that came up in between the melon hills.

Joe himself did not move. Instead he stood surprised, stark and staring in the middle of the melon patch—for it was Squire Jenkins who was climbing the bank, and he was smiling in the clumsiest, best-natured way possible.

"Howdy, howdy, howdy, boys! Don't hide—glad to see ye—every one," he called as he topped the rise. "Been swimming, eh? This is one of the days for it. I feel like it myself, old as I am."

"Yes, sir, we've been swimmin' an' huntin' too—all day," Joe stammered,

"HOWD'YE! HOWD'YE! HOWD'YE, BOYS!"

losing his head for nearly the first time in his life.

"Ah, I see, and you've been shootin' at the crows for me over there—thought I heard a gun or so—thanky, everyone. The crows are the pest of my melon patch. Now, boys, I've got a few fine early fellows that are just aching to be eaten. Suppose you peal a few—and take them back with you across the river. The current will carry them down for you and cool them in the bargain."

The Squire began to thread the tangle of vines, stooping here and there over a big dark green melon, entirely oblivious apparently of the shame-facedness and nakedness of his young callers.

"Hold tight, Dancy, and slip her in easy—that's a real leampbelite—the best melon that grows," he said, cutting a glossy green melon longer than your arm.

The boys following his heels were very red and very silent, and more than a trifle shaky—so shaky indeed that Joe Brierly himself dropped a perfectly gorgeous rattlesnake melon and broke it in ten pieces. Then of course they all tried to pick it up and eat it, the squire himself making one of the group. But somehow the luscious red heart seemed to stick in their throats. Joe choked over it manfully—then all at once stood up very straight, looked full in the squire's face and said:

"Squire, I feel meaner'n a sheep-killin' dawg. How did you know we were here?"

The Squire laughed outright. "Oh," he said, "I was fishing from my canoe over across the river—and I haven't forgot what it means to be a boy if I am fifty years old."

And then he shook hands all round and went up Blue Nose's path to the house, and left the boys to slip down into the old Cumberland and cross in peace to their melon feast.

A DOLLS' WEDDING.

How Children May Give a Parlor Entertainment.

[By Annie Isabel Willis.]

Children like to get up fairs and entertainments, and one of the prettiest things they can do is to give a "dolls' wedding."

Where there are many children staying at a summer resort they can club their dolls and toys together. So can the children of a school, or even half a dozen little girls anywhere. And of course any one little girl can give a dolls' wedding as a feature of a private party of her own.

Still it is very interesting to get up a little parlor entertainment in company with others for some charity and to sell tickets, and have all the grown up people come in full dress and enjoy the pretty show.

The tickets should be sent up in the form of wedding invitations, written on the tiniest of paper. When presented at the door they can be handed back as souvenirs. The price should be about five cents.

In the first place, make a very large platform by laying boards on carpenter's horses. It must be low enough for little children to see comfortable, and must stand so that people can walk all around it.

Partition this platform off into the rooms of a great mansion. You can do this by nailing laths at the corners of the rooms and hanging portieres plainly across. Then curtains can be made of any dark pretty stuff. You do not have outside walls because people could not then look into the rooms. Carpet the platform with some pleasing smooth fabric.

To furnish the rooms, of course every girl contributes her doll furniture, and you all contribute of your pocket money to buy anything lacking.

There may be an entrance hall, with a hat rack, an umbrella stand, chairs and tissue paper palms in small vases as jardiniers.

The next two rooms can be arranged as dressing rooms. There will be a doll man servant in one in a dress suit, and in the other a doll lady's maid in her white cap and apron. The beds should be piled with dolls' wraps and bonnets and coats and hats. There should be chairs and table and mirrors, combs and brushes and toilet things.

The drawing room will have the piano and some chairs, but the chief thing is to have pictures on the curtain walls, strips of white lace to indicate windows, and cornices of tiny vines, a mantel banked with flowers, and an arch of flowers, under which the bridal party will stand. Have a man doll sitting at the piano. Then there is the room to display the presents. These presents are shown on tables—furniture, dishes, imitation silverware, which is now made for dolls and put in fancy cases; fans, parasols, jewelry, dolls' lamps, bookcases, vases—all the bright, pretty things a happy young doll bride

A WEDDING IN DOLL LAND.

can want when she goes to housekeeping.

Lastly comes the supper room with doll waiters in attendance, and a large table beautifully laid with lace and satin and set with china, silver flowers, and all the pretty cakes and bon bons ever eaten at a wedding.

In the drawing room the wedding is going on. The doll bride is in a white dress with a train and a veil, and the bridegroom is in evening dress. Near them stand two bridesmaids and the maid-of-honor, all tiny dolls with baskets of flowers. They stand in front of a clergyman in a black gown. Near by stand two couples, the parents of the bride and groom. The guests are mostly lady dolls, all dressed in the height of fashion, in gay silks and laces, and they all stand. It is easy to make dolls stand by means of wire standards, which can be bent into shape. These are secured to the floor by stout matting tacks, and go up under the dolls' clothes, and can, if need be, be tied to the body.

It is hard to say which is the most enjoyable, the getting ready or the show itself.

WHAT MAKES IT RAIN?

The Reason of Man's Failure as a Rain-maker—The Secret of the Summer Thunder Shower.

[By Professor William Morris Davis of Harvard University.]

A year or so ago some very curious reports appeared in the paper about a government expedition that went down to Texas with supplies of dynamite, rackarock and other explosives, to make it rain. There was a great deal of exaggerated nonsense printed about this expedition; for, if the truth be told, there is not the least reason to think that a single rain storm was caused by all the blasting that the air suffered.

We may truly regret that it is impossible to water the ground by rain artificially called from the sky. If we only could call forth rain from the supplies of vapor stored in the atmosphere, vast regions now desert would be transformed into populous countries. Unhappily, however, there is no ground for believing that rain can be induced to fall by any artificial means that we can now apply.

The natural processes of rain-making involve the movement of great volumes of the atmosphere, whose weight must be thousands of tons; the "rain makers" do not appreciate this. It would require an enormous force to set the air masses in motion at the desired rate when they are not disposed to move by natural forces. This may be easily apprehended if the simplest process of rain-making be examined; such as is seen in our summer thunder showers.

The first feature to be noticed in the cloud of a thunder shower is the manifest ascent of its upper parts. Its outlines are convex in many small curves, and if any one of the curves is carefully watched it is seen to grow rapidly upward and outward. The summit of the cloud spreads forward in a thin fibrous sheet, as if overflowing at the top of the ascending current.

Anyone on the watch through the summer may find examples of such storm-clouds in all stages of growth. A small cloud beginning to form in his neighborhood may drift away, growing as it recedes to the east, and yielding rain to his neighbors in the next county or state. A cloud that began to grow a hundred miles or so to the west, drifting along at the rate of thirty or forty miles an hour, may have attained a rain-making size when it reaches his point of observation. A storm that began about noon several hundred miles to the west may reach the observer after nightfall, generally weakening in the absence of sunshine, perhaps dwindling away without giving him any rain, although it refreshed hundreds of square miles further west.

These local storms of summer generally have a brief life of six eight or ten hours, seldom more. Their essential feature is the ascent of a vast volume of air from a higher level and the condensation of its vapor by the cooling that accompanies expansion in ascent.

We will consider the case of a large cumulus or thunder cloud, whose warm current rises actively to a height of two or three miles at least, and there spreads out horizontally, having found air of its own temperature, above which it will ascend no higher. The cloud consists of innumerable minute particles of water, most of them less than a hundredth of an inch in diameter. The question is, why do the minute water particles grow to the size of raindrops and fall to the ground?

The most important conditions in the the process of rain making are, first the difference in the size of the water particles, and second, the variation in activity of the ascending current.

The particles cannot be of equal size; the process of condensation from invisible vapor into visible water cannot be so uniform as to produce particles all of the same volume. A particle that was first formed near the base of the cloud and then borne upward, grows as it ascends by the condensation of more vapor upon it; near by, another particle just begun will be smaller. The larger the particle the more difficult it is for the ascending current to buoy it and support it, and the more it tends to fall.

The unequal activity of the ascending current in which a thunder cloud is formed may readily be observed. One part of the cloud is seen to grow upwards faster than another, while near the summit the vertical current becomes almost a horizontal movement, and the cloud flows off, an outspreading sheet floating eastward. When it is remembered that it is only the vertical component of the ascending current that supports the water particles against the downward pull of gravity, it is more evident than before that, with the unequal size of the drops and the variation in the ascending current, the particles must be carried upwards at different velocities.

Let us now follow the history of a cloud particle from the time of its first condensation, near the base of the cloud, till it falls to the ground as a drop of rain.

When first formed the particle is minute and easily borne aloft by the ascending currents in the core of the cloud. If it happens to be caught in one of the descending eddies with which thunder clouds are often fringed around the base, it will be carried downward, dissolving away into vapor again as it falls slowly into the warmer lower air. The wasting away of the wisps of descending cloud edges is often noticeable in thunder showers, but the descending motion must be regarded as exceptional and local, compared to the great ascending motion on which the growth of the cloud depends.

The more unusual course of the particle is at first upwards. As it rises with the cooling air its size increases by the further condensation of vapor upon it, also by occasional collisions with other drops. When near the top of the cloud it may be frozen in the low temperatures there prevailing, and while thus icy it may receive a coating of snow; but all this without reaching any considerable diameter, probably not a fiftieth of an inch.

On approaching the summit of the cloud, where the vertical ascent of the air is changed to the horizontal outflow, the particle is less supported and may begin to fall; and there enters a great change in its career. While rising with its neighbors through the centre of the cloud its growth was relatively slow. Now, on reversing its upward course to a descent, its growth is rapid.

Let us suppose the particle we are following is of somewhat greater size than the average of its fellows. It therefore begins to fall a little sooner than they do, and when it falls it may be called a drop. It falls down among a great number of smaller particles, and in colliding with them increases its size and thereby its rate of descent as well. Its growth goes on at an accelerated rate. The larger it grows the faster it falls, the more numerous its collisions. Being very cold after its lofty flight, it increases also by condensation of vapor directly upon its surface as it falls through the damp air of the cloud whose temperature is warmer than its own. Thus everything conspires to give the drop a rapid growth and a correspondingly rapid descent.

It is not, however, always the case that the drops that succeed in falling from a thunder cloud also succeed in reaching the ground. Below the base of the cloud the air is not always saturated with vapor, and there the drops may change from growing to dwindling. They become warmed by the air through which they then fall and lose some of their substance by evaporation. Indeed, in the dry summer air of Montana I have seen an active thunder shower pass overhead and yet yield hardly a drop of rain to the ground. As it rose over the western mountain summits it threatened a heavy shower; as it came nearer the long trailing rain-curtain could be seen hanging from its base; but on still nearer approach, the trailing curtain was found to dissolve away as it stretched down toward the ground; and only the largest drops, falling most rapidly were able to reach the thirsty earth.

In the more successful thunder showers of the Central and Eastern States, clouds yield rain in great quantity. The drops fall thick and fast; they are cold, and indeed often retain their frozen condition as hailstones, indicating a very lofty flight in the air. Such is the case only in the most active storms when the ascent of the central up-draft has been most violent, reaching great elevations.

The impressive point in all this is the simplicity of the process on which the transformation of particles into raindrops depends. It is all of the most commonplace order.

The second important conclusion concerns the enormous scale on which the process must be executed in order to produce a good fall of rain. The volume of an ordinary thunder cloud must be many cubic miles. Much of the vapor condensed in its particles re-evaporates as the cloud dwindles away in the evening; that part which reaches the ground is probably the smaller part of the whole that was condensed. It is only the larger drops that are successful in falling to the earth.

In order that the fall of raindrops should be in quantity sufficient to moisten the dry ground of the summer season, it is necessary that the vapor should be condensed from an enormous volume of air, and this can be accomplished only when the motion of the ascending currents is active and extensive.

And in order that more than a small area shall be watered in this way, the thunder cloud must drift along with the general easterly movement of the atmosphere, thus trailing its rain for many scores of miles, much as a watering cart sprinkles the street over which it is drawn.

It is futile to expect that such vast ascending currents as those of nature can be produced by bonfires or explosions. They depend on the relative temperature and moisture of enormous volumes of air, whose dimensions far exceed those that can be controlled by human ingenuity at present. Indeed, the more carefully the natural processes of rainfall are examined the more hopeless does it seem to imitate them artificially.

HOW DOGS ARE TRAINED.

Taking Care of a Whole Flock of Sheep Alone.

[By Helen Evertson Smith.]

In South America, in the region of the great pasture plains, dogs are trained to be shepherds. I do not mean that a dog goes out with the herdsmen and helps watch the flock. I mean that the dog goes out alone and that he takes the entire care of the sheep without anyone's direction. In South America there are vast plains where for miles and miles there is little vegetation save the short grain on which sheep feed. There are no habitations for men.

On these vast pastures there are immense flocks which are often left for several days at a time with only a dog to take care of them. But well he knows how to do it, for he has been trained for the business.

When "Colly" was only a day old he was taken away from his own mother and given to a big, motherly sheep. She let the little blind puppy share the dinner of her own baby lamb. His little bed was in a warm, soft nest made of the sheared fleece of a sheep.

He was never allowed to taste of meat. He was not permitted to associate with other dogs or with children. His only associates were sheep. Consequently all the strong friendship, all the loyalty, all the protecting instinct which belongs to

THE DOG GIVES THE ORDERS.

a good dog's nature were turned towards sheep. The little dog grew to love sheep, to play with sheep, and above all to watch over sheep and protect them.

No hungry stranger could approach one of these big, wandering flocks in the vast and lonely plain and help himself to a lamb without being noticed. No! At the first sign of a stranger the dog barks.

Then a remarkable sight is to be seen. The oldest and strongest ram of the flock advances to the dog's side. All the other rams come forward and take their places near by facing the foe. The ewes and the lambs huddle closely together behind their defenders.

The dog does the talking for the whole party and gives all the orders, acting the part of a commanding general, but the rams with their big, cruel horns and strong heads do the fighting.

Sometimes, when the owners have sheds near enough, the dog drives the flock out to pasture and brings them back in the evening. No matter how large the flock may be, he knows if even one sheep is missing and he gets out and hunts for it until found.